

# 2020 Demographic Analysis

ONLINE NEWS CONFERENCE



December 15, 2020 | 1 P.M. (EST)



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# Today's Speakers

(In order of appearance)



**Michael C. Cook**  
Chief, Public Information Office,  
U.S. Census Bureau



**Dr. Ron Jarmin**  
Deputy Director and Chief  
Operating Officer,  
U.S. Census Bureau



**Dr. Eric Jensen**  
Senior Technical Expert  
for Demographic Analysis,  
U.S. Census Bureau



**Dr. Victoria Velkoff**  
Associate Director for  
Demographic Programs,  
U.S. Census Bureau



**Dr. Carolyn Liebler**  
Associate Professor of Sociology,  
University of Minnesota



**Dr. Jeff Passel**  
Senior Demographer,  
PEW Research Center



**Dr. Elizabeth Arias**  
Statistical Analysis and  
Research Team Leader, National  
Center for Health Statistics



**Karen Battle**  
Chief, Population Division,  
U.S. Census Bureau

# Welcome Remarks

**Ron Jarmin, Ph.D.**

Deputy Director and Chief Operating Officer,  
U.S. Census Bureau



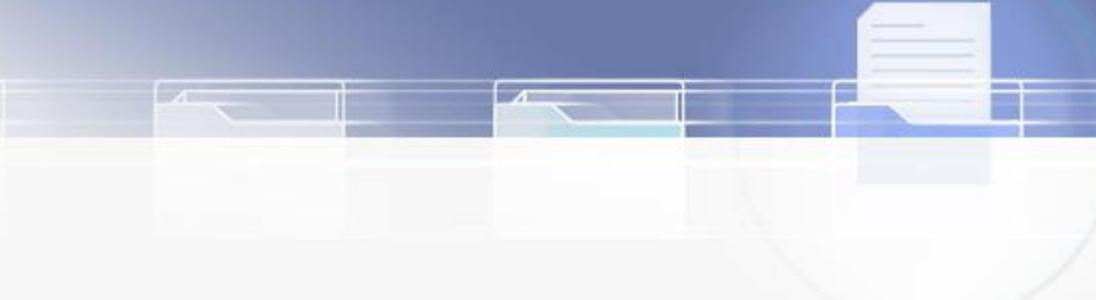
# The 2020 Demographic Analysis Estimates: Methodology

**Eric Jensen, Ph.D.**

Senior Technical Expert for Demographics Analysis,  
Population Division, U.S. Census Bureau



# What is Demographic Analysis?

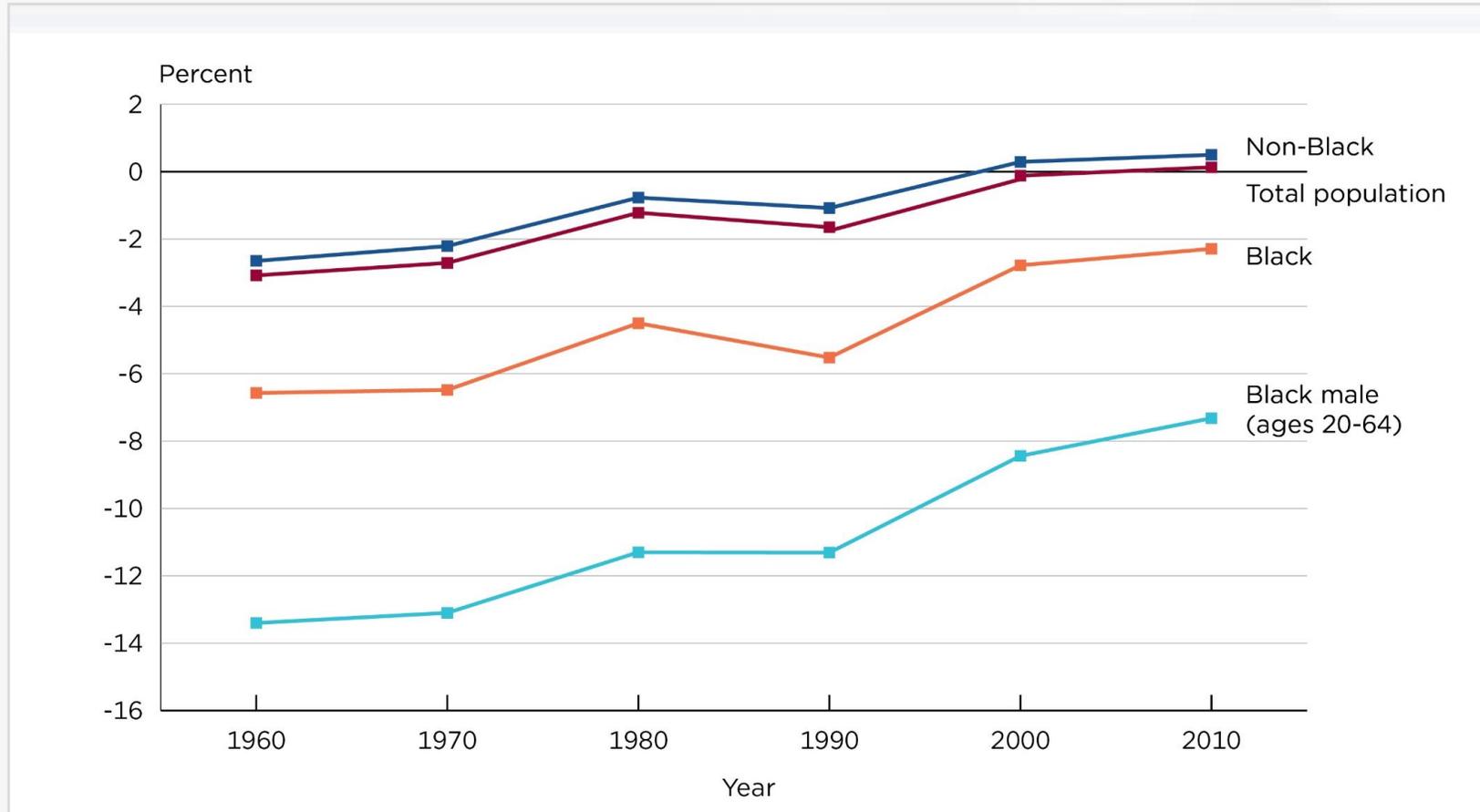


- Demographic Analysis (DA) is a method that the Census Bureau uses to evaluate the quality of the decennial census.
- We produced national estimates of the population as of April 1, 2020 by age, sex, DA race categories, and Hispanic origin.
- Estimates are developed using current and historical vital records, data on international migration, and Medicare records.
- The estimates are used to develop estimates of net coverage error at the national level by demographic detail.

# What Demographic Analysis Tells Us About the Quality of the 2020 Census Results

- DA can tell us about the net coverage error for specific age, sex, DA race, and Hispanic origin groups at the national level.
- Net coverage error combines undercounts and overcounts for the same group.
- The strength of DA is what it tells us about differential coverage for demographic groups either within the same census or over time.
  - Coverage differentials by race
  - Undercount of young children

# Demographic Analysis Estimates of Net Coverage Error From 1960 to 2010



Note: Net coverage error is calculated as the percent difference between the census counts and the Demographic Analysis estimates.

Source: U.S. Census Bureau, Population Division, Demographic Analysis Program, Special Tabulation.

# Demographic Analysis Method

$$\text{Population} = \text{Births} - \text{Deaths} + \text{Immigration} - \text{Emigration}$$

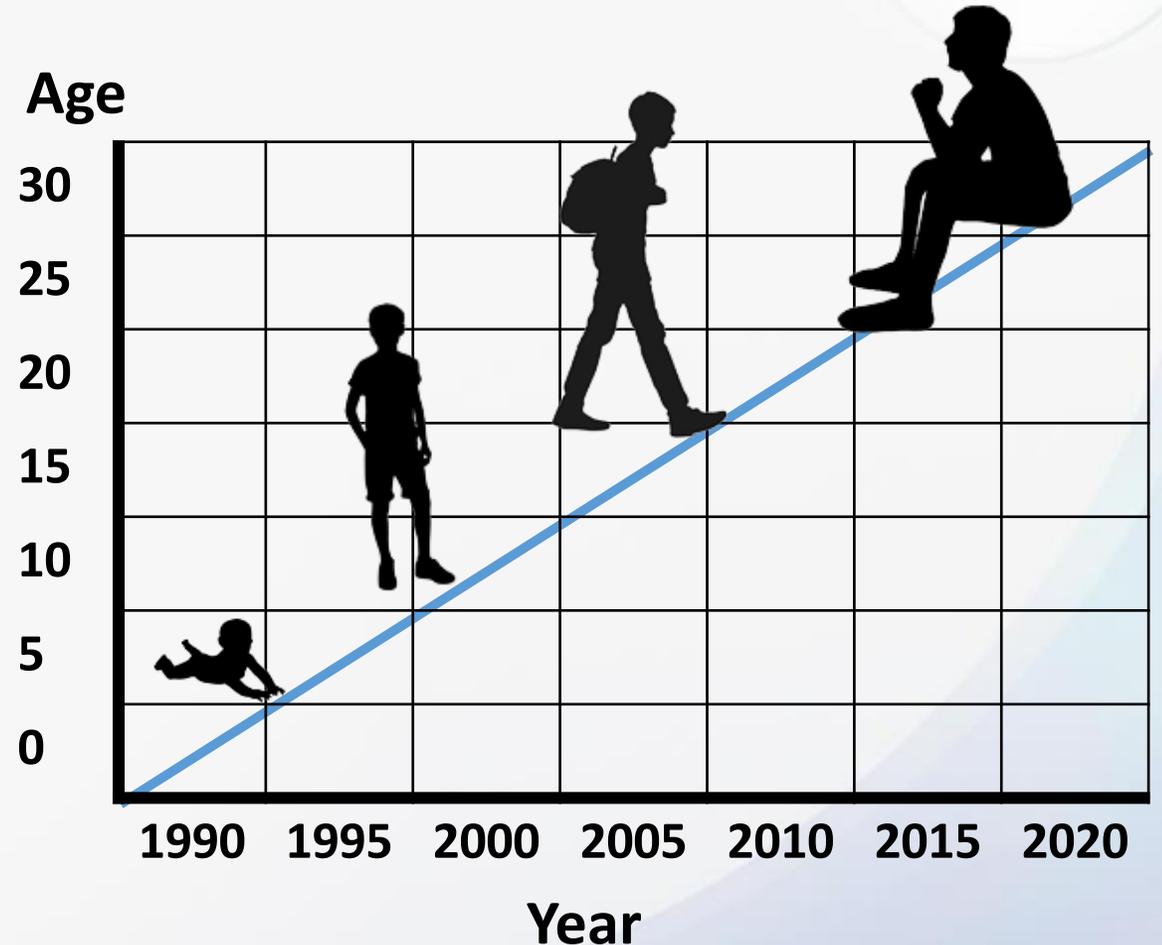
- Birth records are the foundation of the DA estimates.
- The total estimate for each cohort is calculated by answering two questions:
  - Who was in the birth records from 1945 to 2020 but was not living in the United States on April 1, 2020?
  - Who was living in the United States on April 1, 2020, but was not in the birth records?

# Demographic Analysis Method

(continued)

## Example

- In 1990-1991, there were 2.1 million male births in the United States.
- From 1990-2020, there were 68,000 male native deaths to that cohort.
- By April 1, 2020, there were an additional 355,000 males added to that cohort due to net international migration.
- We estimate that there should be approximately 2.4 million males in the 2020 Census that are age 29.



# Demographic Analysis Method

(continued)

- We use Medicare enrollment records to estimate the population born before 1945 (ages 75 and older) on April 1, 2020.
  - Adjustments are made to account for under-enrollment.
- To calculate the total population, we sum the estimates for each birth cohort from 1945 to 2020 and add them to the estimates of the population 75 years and older.

# A Range of Demographic Analysis Estimates

- We produce three series of estimates to account for uncertainty in the data and methods used to create the DA numbers.
- Each series is a plausible estimate of the U.S. population on April 1, 2020.
- We developed the range of estimates by varying the assumptions used to produce the components of population change.

## Difference Between the Low and High Series by Population Component

Components	Percentage
Births and Deaths	19.7
International Migration	49.7
Oldest Ages (Medicare)	30.6
<b>Total</b>	<b>100.0</b>

# Estimates Available at the National Level

- Currently, estimates can only be produced at the national level.
- Birth records tell us where a person was born, but good data are not available to determine where that person was living on Census Day.
- We plan to produce experimental state and county estimates for the population aged 0-4 once the birth records for counties become available in 2022.

# The Demographic Analysis Race and Ethnic Categories

- DA estimates have been limited to the Black and non-Black categories primarily for two reasons:
  - Information for races other than Black and White is not available for all years and all states in the historical vital statistics data.
  - The 2020 Census includes the option of selecting more than one race, but the historical vital statistics did not include this option.
  - The uncertainty that this introduces into the classification of births by race limits the usefulness of DA estimates for race categories other than Black and White.
- Hispanic origin information was not available on the birth certificates for all states until 1990.

# Demographic Analysis in 2020



- Nearly a decade of research to improve the methods used to produce the 2020 DA estimates
- Increased collaboration with external experts
  - Demographers from universities, research centers, state agencies, and other federal agencies
- Released the DA estimates before the 2020 Census results
  - The estimates are completely independent of the 2020 Census.

# Results of the 2020 Demographic Analysis Estimates

**Victoria Velkoff, Ph.D.**

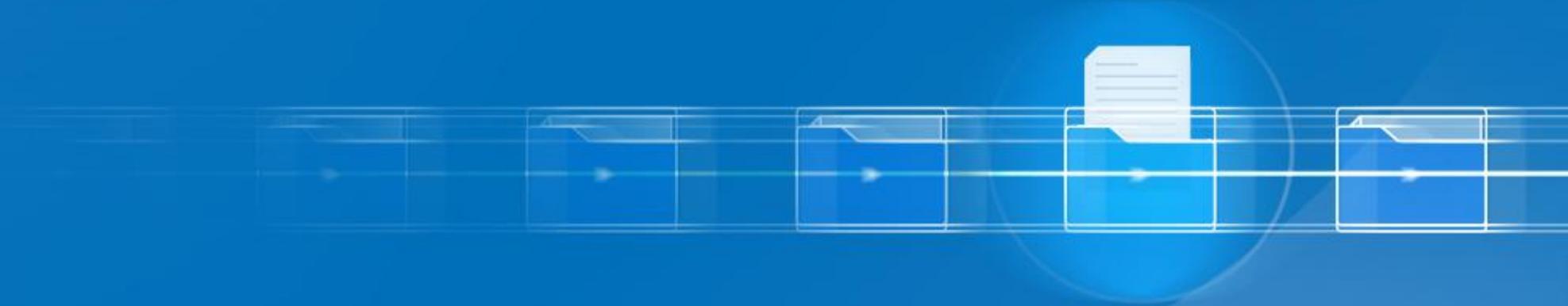
Associate Director for Demographic Programs,  
U.S. Census Bureau



# What is Being Released Today?

- Three sets of Demographic Analysis (DA) population estimates:
  - Black Alone/non-Black Alone
  - Black Alone or in Combination/non-Black Alone or in Combination
  - Hispanic (ages 0-29 only)
- National estimates by age, sex, DA race groups, and Hispanic origin
- Low, middle, and high series for each set to measure uncertainty
- Components of population change for all three sets and series
  - Births, deaths, international migration, and Medicare-based estimates

# Results of the 2020 Demographic Analysis



# 2020 Demographic Analysis

## Estimates of the U.S. Population as of April 1, 2020

LOW

330,730,000

MIDDLE

332,601,000

HIGH

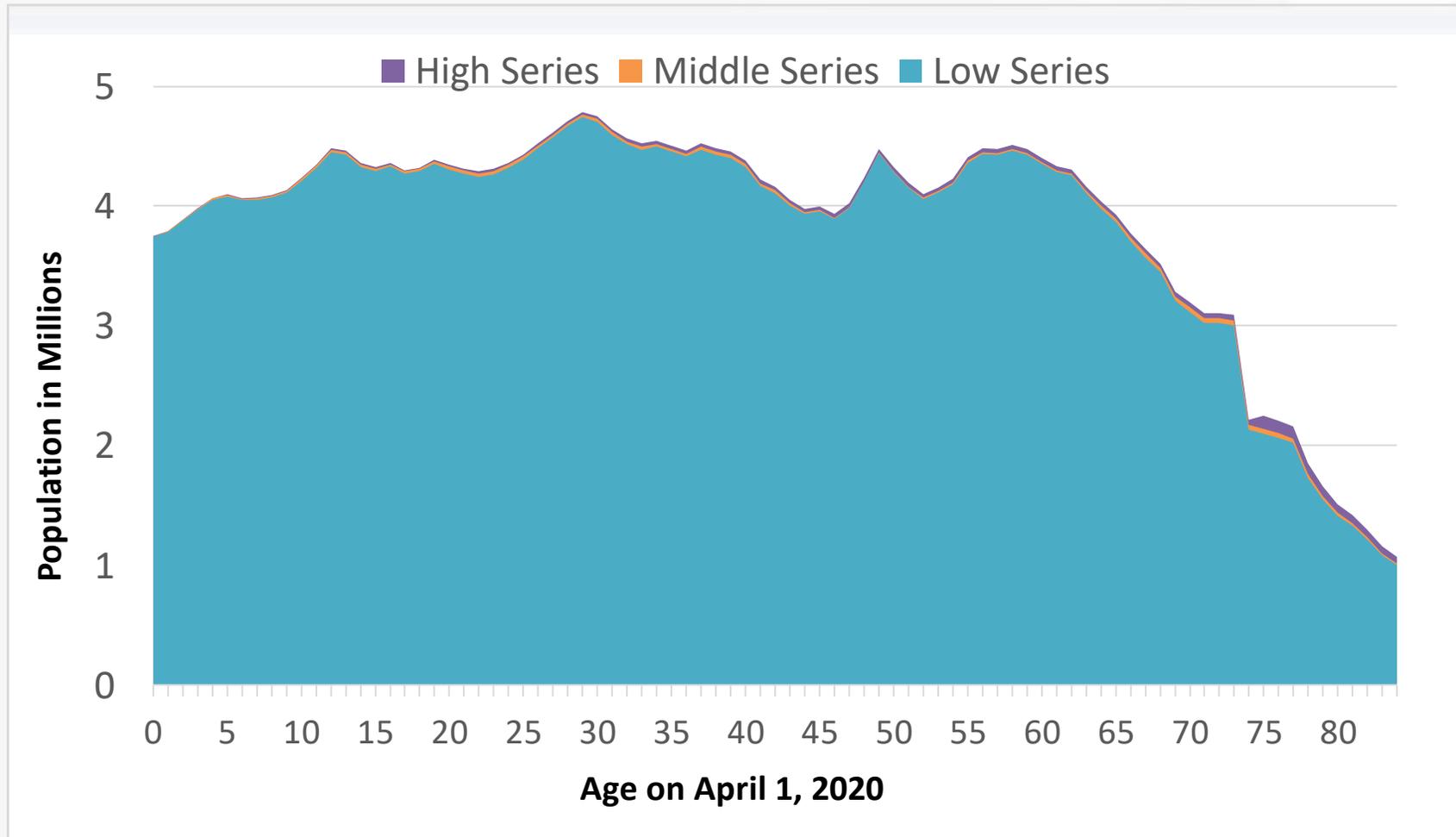
335,514,000

# Total Population by Age and Sex

Results of the 2020 Demographic Analysis

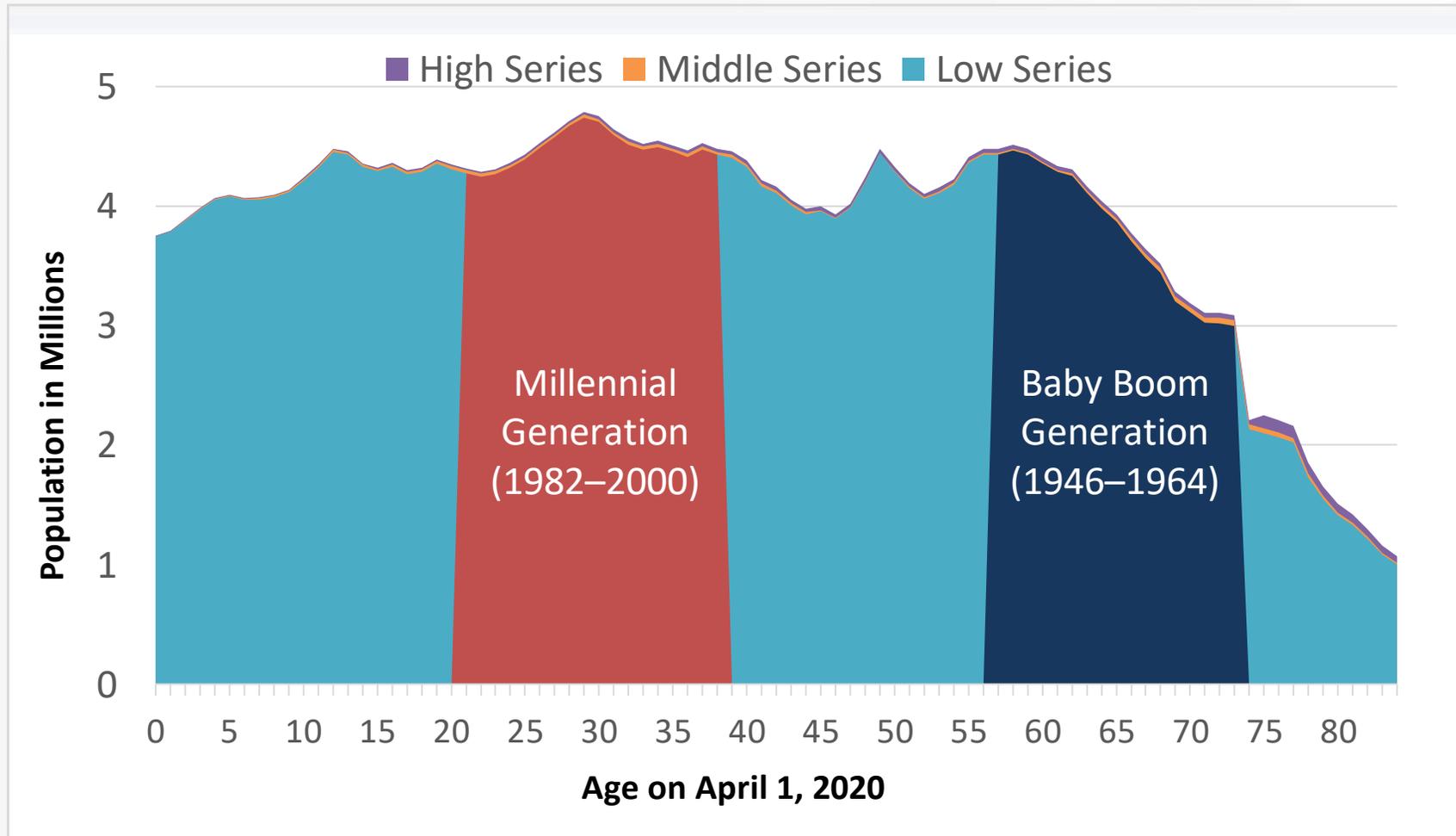


# Total Population by Age for the 2020 Demographic Analysis Estimates: April 1, 2020



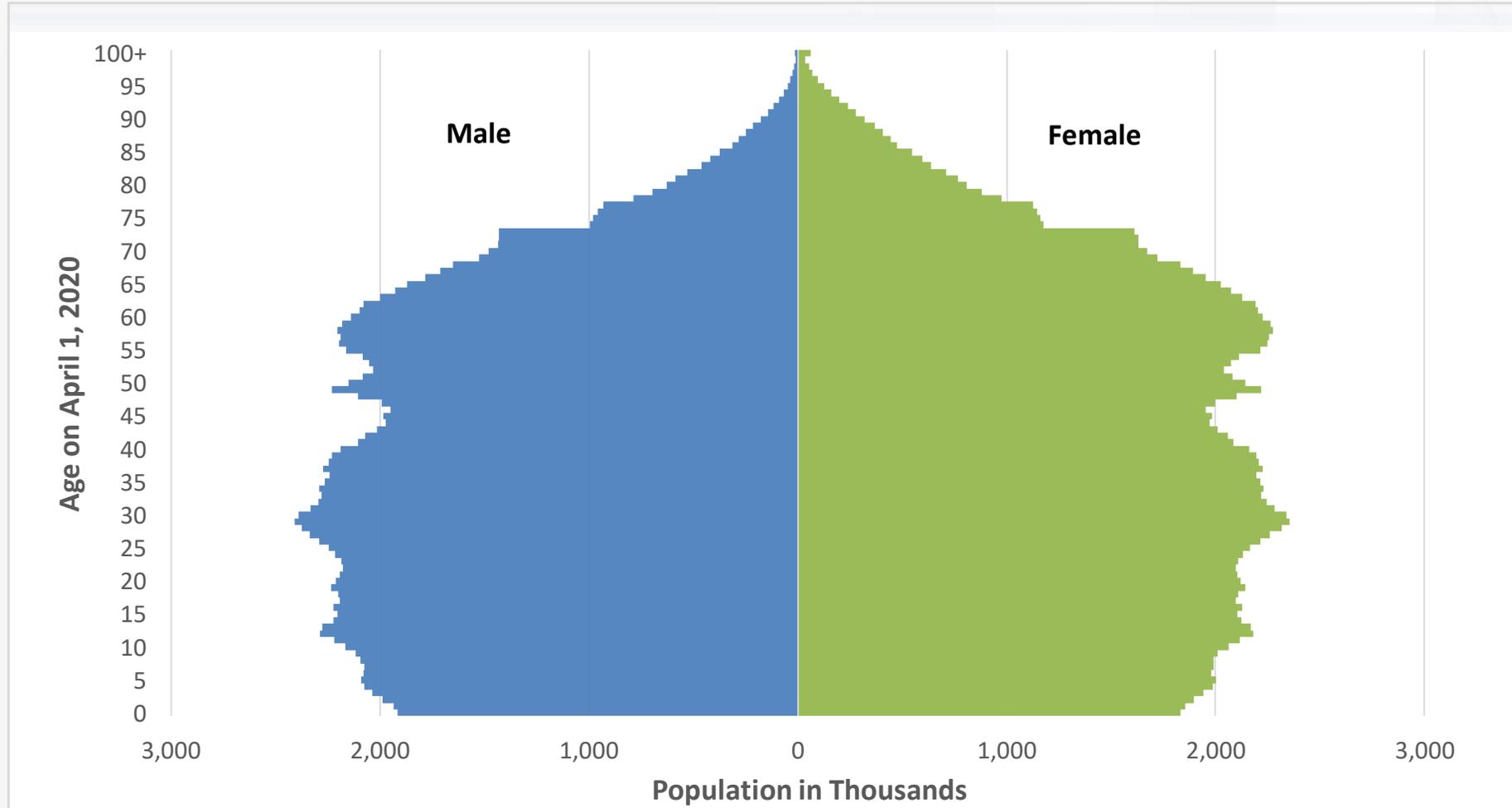
Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Total Population by Age for the 2020 Demographic Analysis Estimates: April 1, 2020



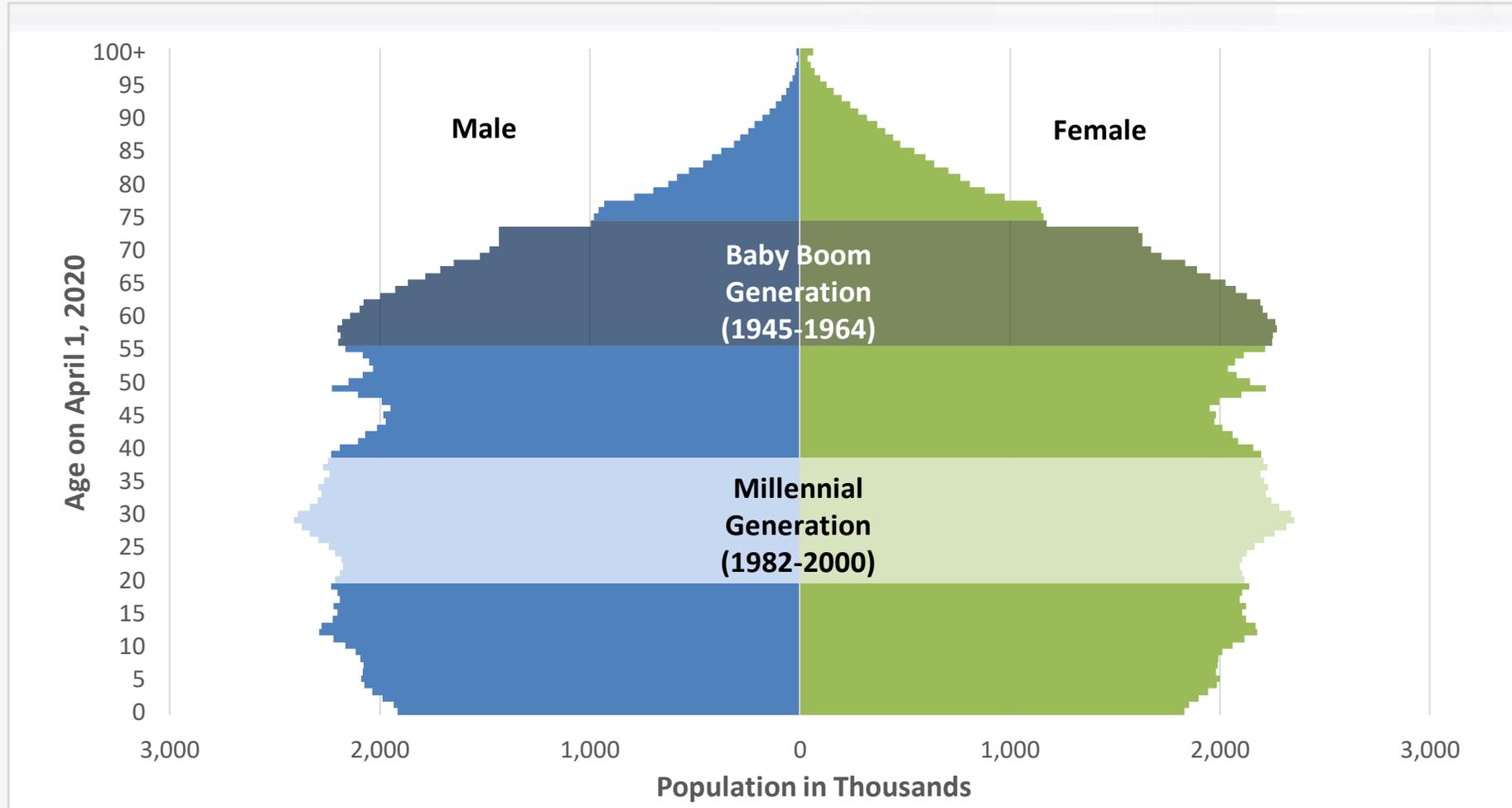
Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Population Pyramid for the 2020 Demographic Analysis Estimates (Middle Series): April 1, 2020

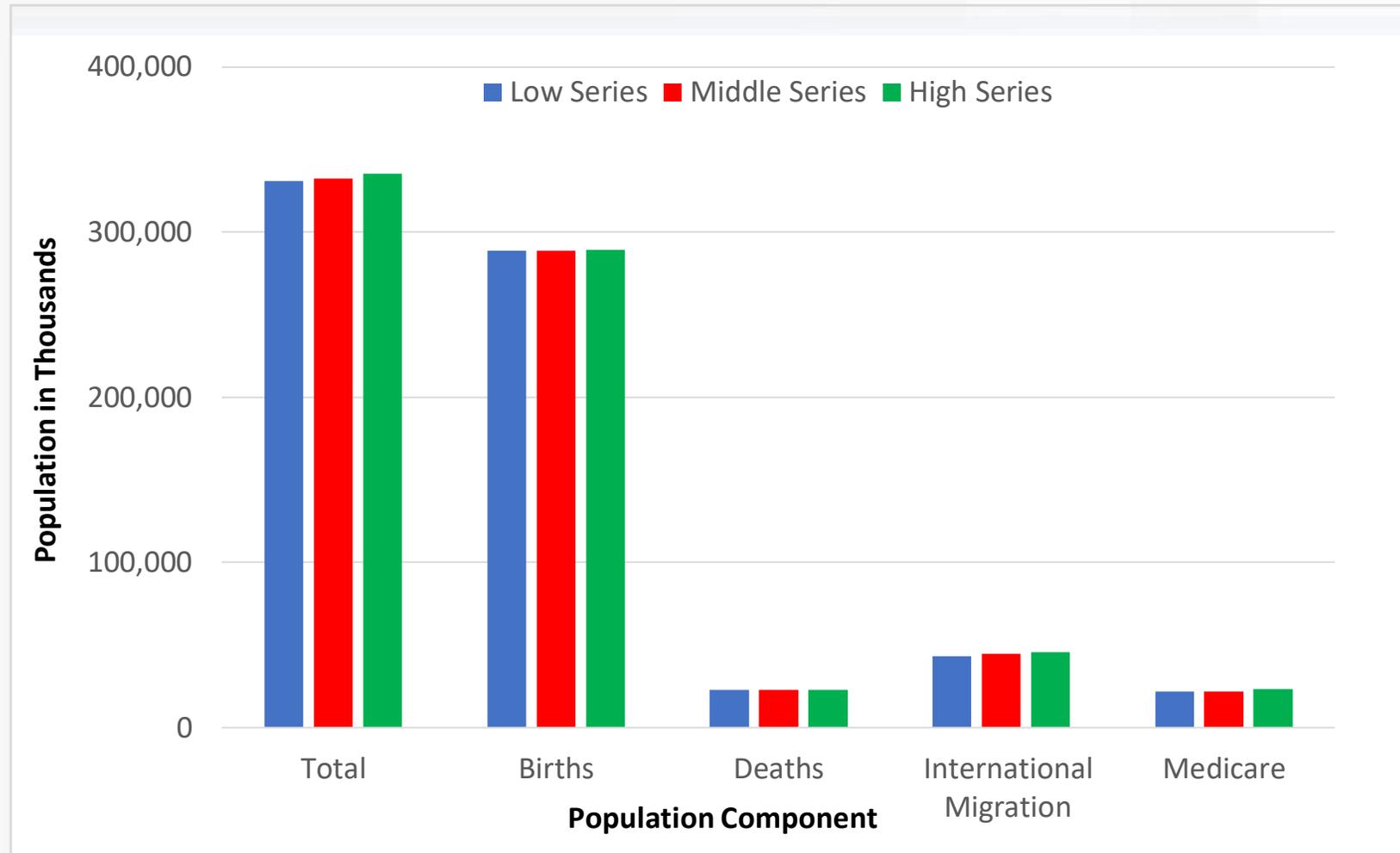


Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Population Pyramid for the 2020 Demographic Analysis Estimates (Middle Series): April 1, 2020



## 2020 Demographic Analysis Estimates by Series and Population Component: April 1, 2020



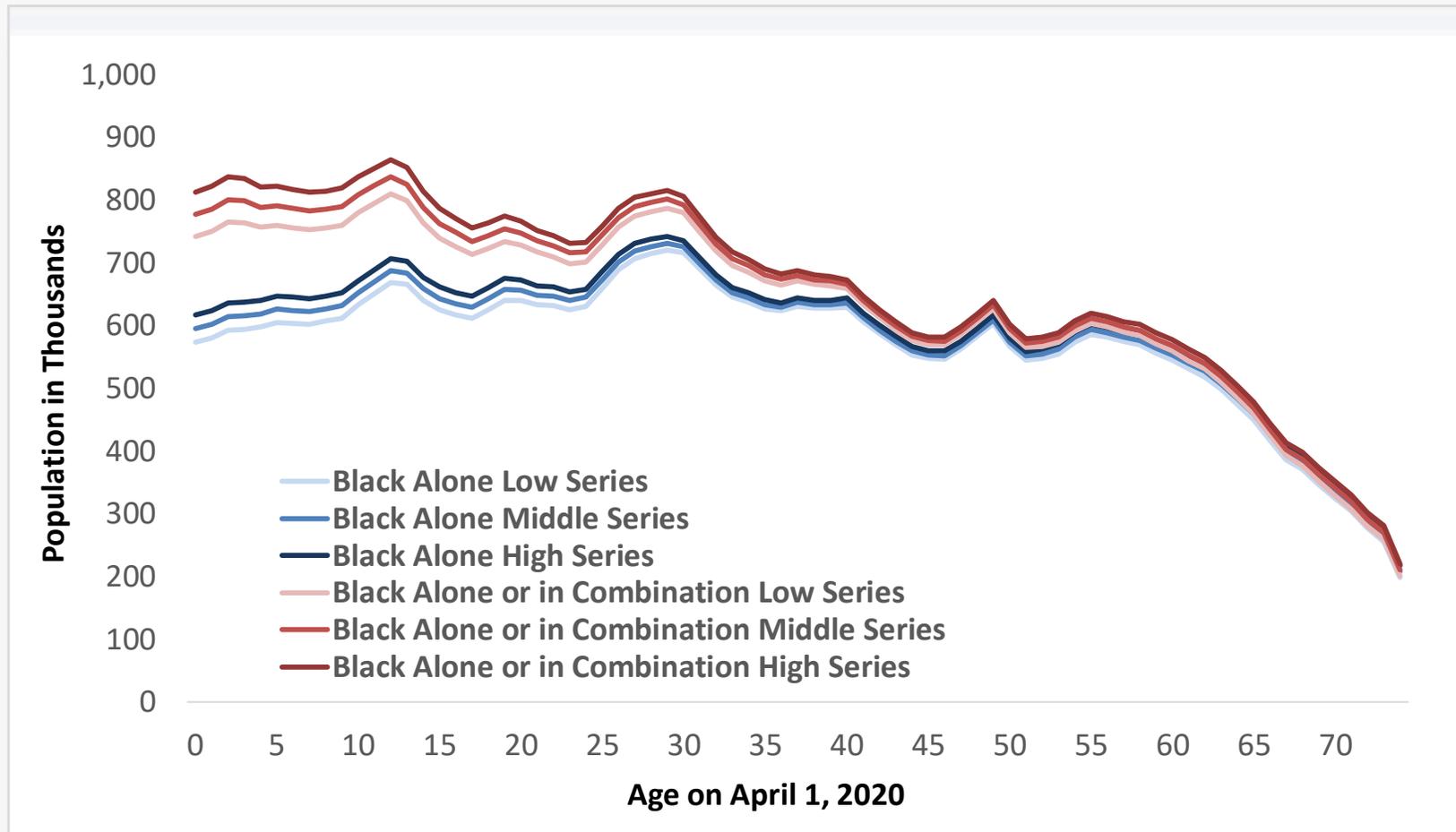
Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Black Alone and Black Alone or in Combination

Results of the 2020 Demographic Analysis

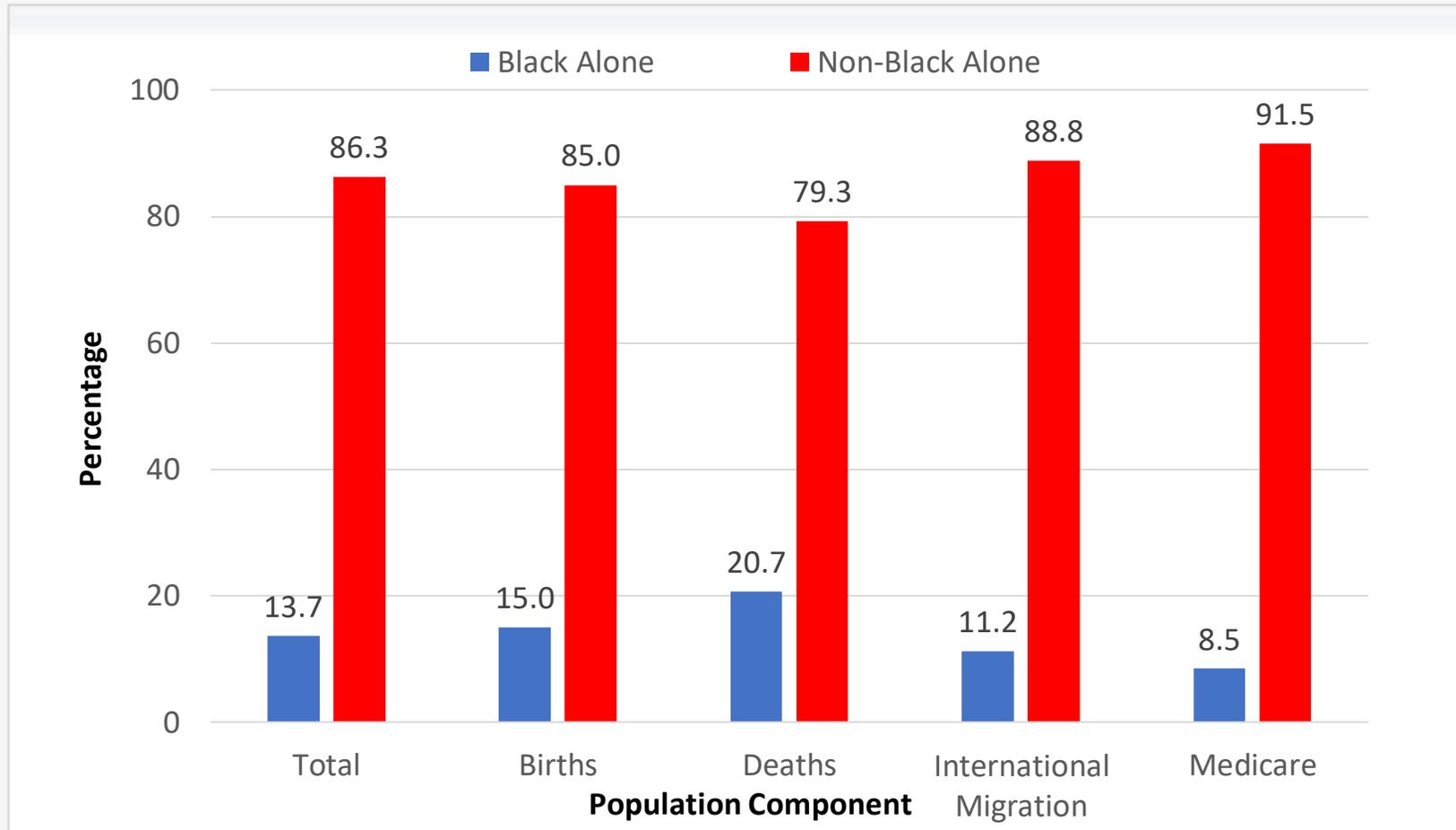


# Demographic Analysis Estimates of the Black Alone and Black Alone or in Combination Populations by Age and Series: April 1, 2020



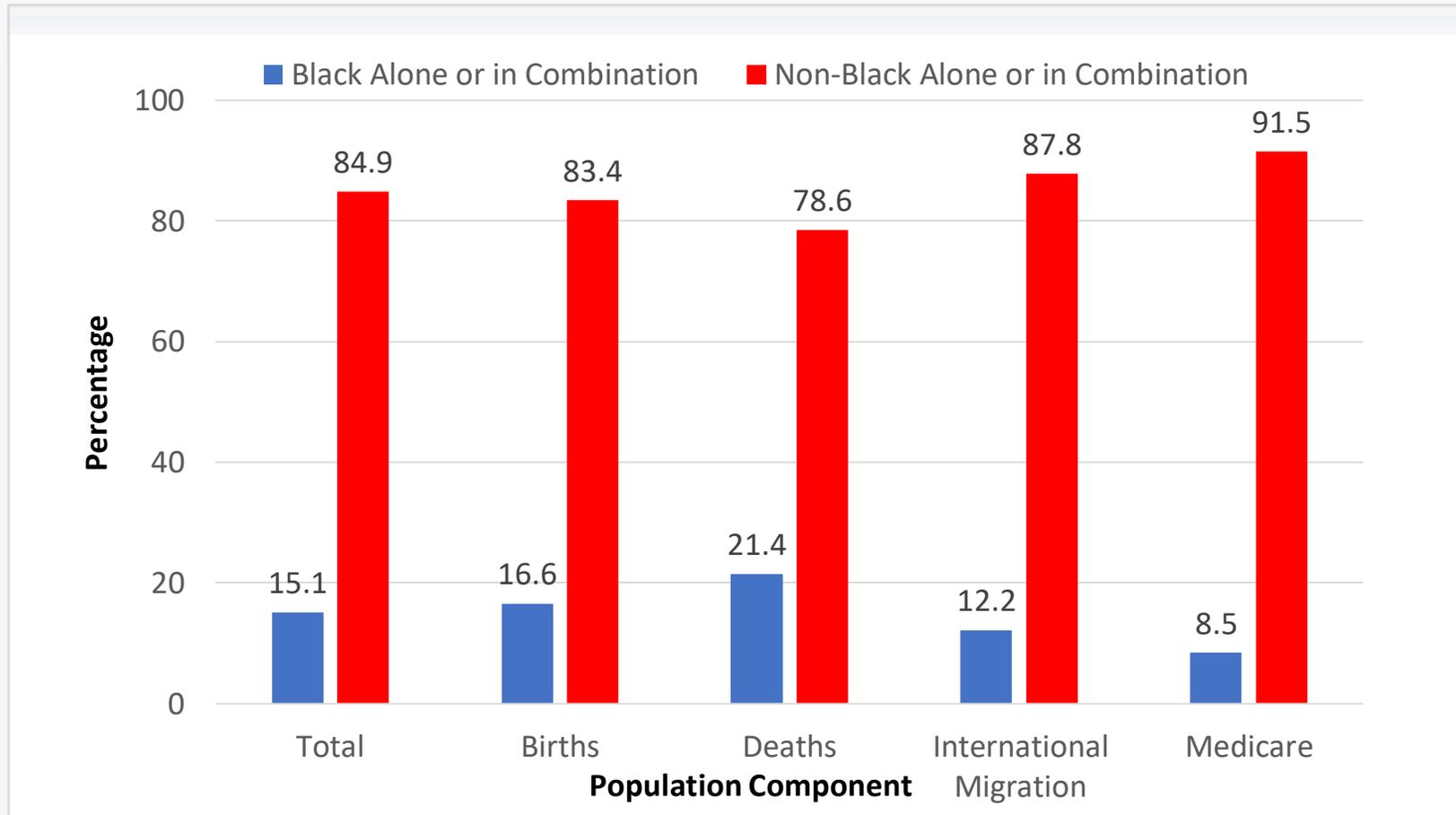
Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Distribution of the 2020 Demographic Analysis Black Alone/Non-Black Alone Estimates by Population Component (Middle Series): April 1, 2020



Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Distribution of the 2020 Demographic Analysis Black Alone or in Combination/Non-Black Alone or in Combination Estimates by Population Component (Middle Series): April 1, 2020



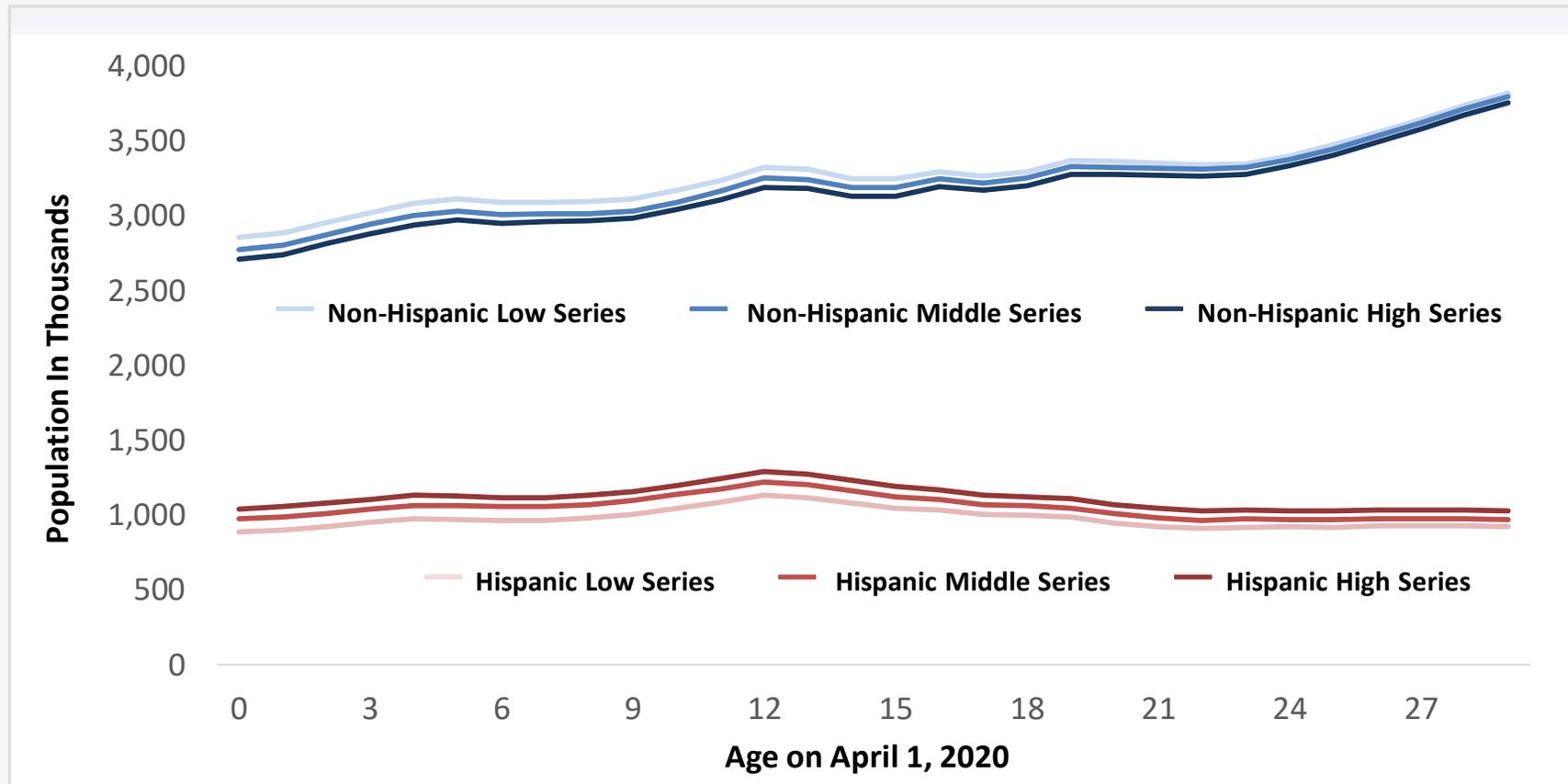
Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Hispanic/Non-Hispanic

Results of the 2020 Demographic Analysis

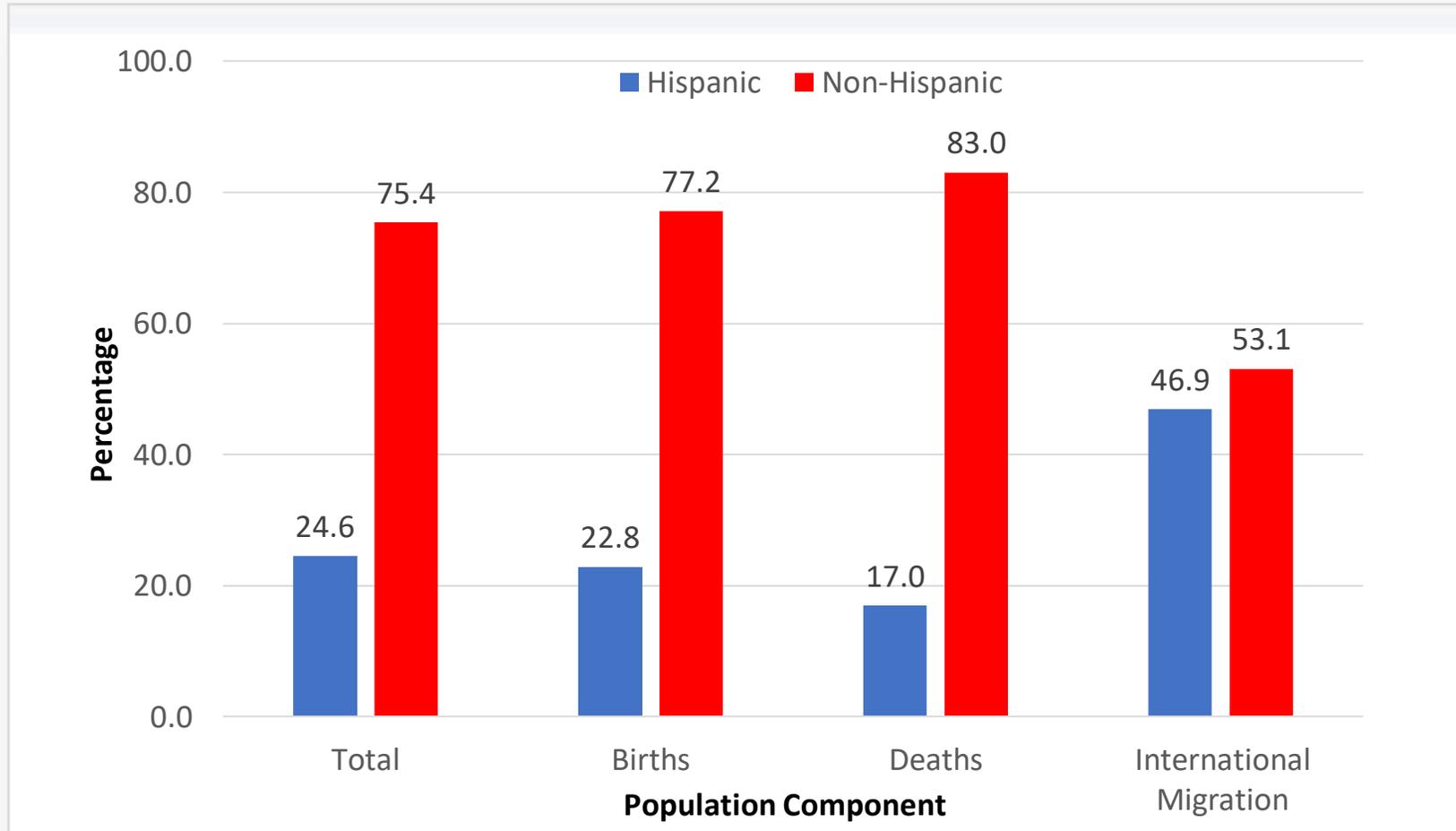


# Demographic Analysis Estimates of the Hispanic and Non-Hispanic Populations by Age and Series: April 1, 2020



Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Distribution of the 2020 Demographic Analysis Hispanic/Non-Hispanic Estimates by Population Component (Middle Series): Ages 0-29 on April 1, 2020



Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

# Next Steps

- Report on DA estimates of net coverage error to be produced in 2021
- Experimental sets of estimates to be produced in 2021 and 2022:
  - Extended Hispanic origin (ages 0-39)
  - Churning race (ages 0-85+)
  - Full race and Hispanic origin detail (ages 0-17)
  - State and county estimates (ages 0-4)

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# Collaboration With External Demographers



**Dr. Carolyn Liebler**  
Associate Professor of Sociology,  
University of Minnesota



**Dr. Jeff Passel**  
Senior Demographer,  
PEW Research Center



**Dr. Elizabeth Arias**  
Statistical Analysis and Research  
Team Leader, National Center for  
Health Statistics

# 2020 Demographic Analysis

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## Q&A



December 15, 2020

# Closing Remarks

## Karen Battle

Chief, Population Division,  
U.S. Census Bureau



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